

**Reply to Tandjaoui-Lambiotte *et al.***

*From the Authors:*

We read with interest the correspondence by Dr. Tandjaoui-Lambiotte and colleagues in response to our article (1). We thank them for underscoring the importance of environmental factors on viral dispersion, including the role of ambient ventilation. Our main objective was to characterize the influence of different respiratory support modalities on viral dispersion in the context of a controlled, simulated critical care environment. It was critical to control for confounding factors that would have perturbed the nature of particle dispersion in the room. Therefore, a controlled critical care simulation room was set up at Sunnybrook Health Sciences Centre to establish consistent environmental conditions that would ensure that respiratory support modality remained the sole dependent variable. The environmental conditions of the simulated critical care room can be found in the methods section (1), in which we describe room dimensions, ventilation parameters, and environmental temperature and relative humidity. These conditions were kept constant throughout every experiment conducted in the study to control for the aforementioned potentially confounding environmental factors and isolate the influence of a given respiratory support modality on infectious particle dispersion. We acknowledge that changing these environmental parameters would influence the nature of particle dispersion; however, the primary aim of the study was to directly compare the influence different respiratory support modalities have on viral dispersion, not the effects of environmental conditions. The construction of the simulation center was based on the conventional, contemporaneous ICU environments most familiar to us, which do not include open windows but rather a regulated air-exchange ventilation system to facilitate appropriate room ventilation parameters. In many care environments around the world, ventilation is facilitated and influenced by open ventilation and variable air currents, and we agree that it is important to study the impact of such factors in different environments.

We also agree that environmental conditions and other external factors may influence surface contamination; however, this was not in the scope of our study, and we did not aim to elucidate the impact that different respiratory support devices have on surface contamination.

Lastly, we agree that respiratory support modalities should not be the only consideration taken into account when determining

prudent infection prevention and control practices and patient care, and this contributes to the expected limitations and scope of our study (1). We agree wholeheartedly with Yacine Tandjaoui-Lambiotte and colleagues that more research is warranted on how different environmental factors may influence infectious particle dispersion in the air. ■

**Author disclosures** are available with the text of this letter at [www.atsjournals.org](http://www.atsjournals.org).

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**Reference**

1. Avari H, Hiebert RJ, Ryzynski AA, Levy A, Nardi J, Kanji-Jaffer H, *et al.* Quantitative assessment of viral dispersion associated with respiratory support devices in a simulated critical care environment. *Am J Respir Crit Care Med* 2021;203:1112–1118.

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Originally Published in Press as DOI: 10.1164/rccm.202105-1241LE on June 22, 2021